Strategy Research Project

Is 'Back to Basics' Logistics Where We Need to Go?

by

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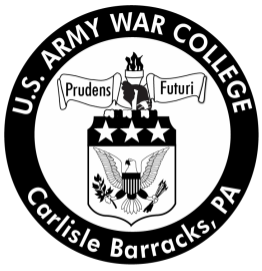

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IS 'BACK TO BASICS' LOGISTICS WHERE WE NEED TO GO?

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ABSTRACT

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The United States Army has been in persistent conflict over the last ten years since the announcement of the Transformation and the introduction of Joint Vision 2020, which called for a new focused logistics strategy and a reduction in logistics mass. Unfortunately, the transformation in logistics and sustainment for the Army took a back seat to the close fight war effort to ensure the war fighter was well resourced and sustained. Now with the war in Iraq winding down and the war in Afghanistan heading in the same direction, the cry in garrison is for units to get “back to basics”. Years of overly healthy stocks, excess equipment in theater, and a war resourcing mentality has given rise to a culture of leaders and Soldiers who have never been without. This cry for back to basics is coming from the highest level of leadership in many different war fighting functions, and sustainment is no exception. But is it wise to preach a back to basics message to a force that has no idea what that means? Or should the message capitalize on the talent and experience troops have gained in ten years at war.

IS ‘BACK TO BASICS’ LOGISTICS WHERE WE NEED TO GO?

> Leaders win through logistics. Vision, sure. Strategy, yes. But when you go to war, you need to have both toilet paper and bullets at the right place at the right time. In other words, you must win through superior logistics.
>
> —Tom Peters[1]

Logistics superiority has been an absolute game changer in the wars since the beginning of time, and crucial for the success of any military operation. The American reputation for how the forces are supplied, moved, and fixed is heralded as a finely oiled machine. In actuality, it is a lot of hard work, experimentation and impromptu doctrine. The last major structured U.S. Army Transformation happened in the late 90’s. Many changes were tried and tested and some elements successful, while others proved inadequate or detrimental in the face of these wars and were abandoned. The difficult charter for the logisticians in the post-war Army will be to figure out what needs to change now. Unfortunately, the battle cry heard across Forces Command (FORSCOM) is “Back to Basics”. This is problematic, for what the Army really needs is another effective transformation campaign.

This back to basics theme is prevalent in many different sectors of the military. In October 2011, the FORSCOM Commander, General J.D. Thurman, stated while speaking at a formal dinner in Washington, D.C., “We need to get ‘back to basics’ in providing trained, ready, and equipped soldiers.” He added to his edict, this needed to include Combat Training Center changes in “logistics on the move” to support a supply-based rotational model.[2] The message is not only confusing, but is being sent across the forces as if it is a natural post-war progression. Back to basics is also getting preached in the enlisted ranks as well. Command Sergeant Major Dennis M. Carey, the

FORSCOM CSM, sent out a message to all the enlisted troops and Noncommissioned Officers, “Go back to basics”.[3] What does this really mean?

In June 2011, the FORSCOM G4, Major General Raymond V. Mason, hosted a “Back to Basics” Conference in North Carolina. At this aptly named conference, MG Mason urged sustainment leaders to find creative ways to get logistics back on track.[4] The term “back on track” referring to going back to the basics, and inferring that logistics has somehow fallen off the proverbial track. Years of overly healthy stocks, excess equipment in theater, and a war sourcing mentality has given rise to an Army of leaders and Soldiers who have never been without. Is logistics off track, or just travelling a different road? MG Mason’s insistence that things need to change is good, but the question remains, where are we going and what is the best way to get there.

Messaging is an important aspect to strategic leadership. Perceptions can break wills and win wars, and they can steer an Army in recovery in the right direction or the wrong direction. It is so important the right message is sent to leaders and Soldiers, to include sustainment providers, on how we need to go forward and transform for the next fight. All agree change is required, but the message to get back to basics is the wrong message to send.

A proactive approach needs to be taken to get the Army to an end state destination and past the turmoil of the last decade. Logistics elements can train as they are suppose to fight, study doctrine at the schoolhouse, and try to convince their combat arms customers the best way to doctrinally support a notional fight, but throw a war in the mix, and all bets are off. The way to sustain a force is by all available ways in the most expeditious means possible. This does not mean, however, that we cannot pre-

plan and prepare for the unknown future. The United States has been doing “bootleg logistics” for a decade with changes made on the fly to accommodate the environment, in two different theaters, fighting two very different wars. The U.S. military has been operating logistics for maximum effectiveness, not efficiency. It is time to take logistics transformation to the next level.

An entire generation of war fighters has been exposed to logistics that may or may not be in line with doctrine, the latter being more likely. In addition, doctrine is changing so quickly that within a couple year span, junior leaders have been exposed to conflicting doctrine which, more than likely, is not how things are done in theater. The schoolhouse is making reactive changes at a quicker pace than ever before. For example, contractors are being hired to do more jobs and services once considered risky and force protection prohibitive, such as field feeding, base security, and running base garrison services. Contractors are also being used to perform jobs when logistics forces are in short supply, such as laundry, transportation, postal support, and maintenance of equipment. Unfortunately, a large portion of our forces have not been in the military long enough to know these are wartime deviations. Instead of forcing an entire generation back to doing things done in the 90’s, now is the time to capitalize on this void and provide a venue for creative thinking and constructive change.

The first step to tackling this change of culture is to define logistics. Then a deeper glimpse into the history of logistics, particularly for the United States, will help shape the discussion of transformation efforts of the late 90’s. That last big attempt at transformation will be examined in depth, both before 9/11 and the efforts after. The conclusion will consist of a way ahead for the future of logistics.

What is Logistics?

According to Joint Publication 3-0, logistics encompasses strategic, operational, and tactical support integrated within a theater, and covers “supply, maintenance operations, deployment and distribution, health service support (HSS), logistic services, engineering, and operational contract support.”[5] Logistics is how we move and support our forces and is found at all levels.

Logistics is the most complex, dynamic, diverse functional element on the Army battlefield, often determining success or failure. In order to be effective, it must deliver value to the maneuver commander. Martin Van Creveld stated that “logistics makes up as much as nine tenths of the business of war.”[6] Conflicts often result in mountains of supplies, provided by an industrialized economically rich nation and America’s ability to produce goods and services. The U.S. has a rich history of providing for its Soldiers through overwhelming volume, switching between peacetime efficiency driven logistics to wartime effectiveness driven logistics. As stated by Norman Cousins, “History is a vast early warning system.”[7] Many lessons can be learned, and some need to be relearned. Ideally, logistics should be efficiently effective.

History of Logistics

Much has been written about historical battles with operational and strategic influencers. For every 100 books on operational history, there is one book that mentions logistics or spends time discussing strategic implications of sustaining forces or how logistics impacted the outcome. Very little is written that studies how the logistics leadership transformed doctrine or implemented lessons learned based on what worked for that last fight. There are some generalities worth mentioning, though, that demonstrate that regardless of whether the changes were reflected in written history,

logisticians have been transforming the way the Army sustains troops since the first known clashes.

Pre-WWI. Early Armies often used plunder, the spoils of war, or contracted civilians to acquire what they needed, and this practice continued up to the First World War. As written by Richelieu, “History knows many more armies ruined by want and disorder than by the efforts of their enemies.”[8] Logistics becomes increasingly important and more difficult when Armies have to fight on foreign soil.

Two French men, a father and son, Le Tellier and Louvois, came up with a system of magazine caches in the early 1630’s.[9] This system of stashing supplies, was also adopted by the American military in early wars and became part of our doctrine, as demonstrated by early Army frontier forts and caches. Under this system, Armies could only be kept fed as long as they were moving. Food and ammo were the hardest commodities to stock and provide the troops, and supporting the movement of supplies, the horses, wagons, and accompanying staff, was not insignificant. It has even been suggested that Napoleon’s Army, who was said to march on its stomach, met their ultimate fate due to Napoleon’s inattention to the lines of communication required to support his troops.[10]

World War I (1914-18). Organized plunder was no longer a viable means of resupply once the need for fuel and ammunition and other wartime specific items were required that could not be found along the countryside. Replenishment of supplies from a base became more important and critical to success.

During WWI, the German’s Schlieffen Plan was hampered by the ability to logistically resupply and move troops. Schlieffen knew there were problems with

supplying the troops and assuming they could live off the land, but there is little proof he put much thought into fixing these problems. Throughout WWI, the old modes of transport by horse and wagon, even augmented with rail, was inadequate as demonstrated by permanently fixed trenches.[11]

World War II (1941-45). WWII means of resupply was also a tremendous feat, but saw doctrine tarnished by the realities of war in the new industrial age. The motorization of the Army made a significant impact on how fast, how far, and how long a unit could be sustained in combat. The immediate impacts were more at the operational and tactical level, but ultimately influenced the strategic fight. Rail was still a strategic advantage to move large amounts of supplies, but flexibility was limited with the track. The truck gave a tactical advantage needed to capitalize on successes of a battle and ultimately influenced the final outcome.

Hitler was enamored with the new technology found in the motorized wheeled vehicle. Fortunately for the Allies, Hitler's Germany in 1939 had under one million wheeled vehicles on their roads, a 1:70 ratio of vehicles to people, whereas the U.S. had a ratio 1:10.[12] Germany also did not have ready access to oil and rubber, which America did. With Hitler's determination to take advantage of the new motorized carriage, his country's rail fell in disrepair. Due to resource constraints, he was never able to outfit more than a small portion of his units with motorized vehicles. It was a mistake to rely on raw materials that had to be imported, but the thirst for technology was again, changing the face of battle.

Hitler's decision to go into the Soviet Union was influenced by his pursuit of oil and grain needed to keep his troops supplied, and logistics requirements forced him to

follow rail lines.[13] Strategically, the Germans were never able to capitalize the use of rail due to mismatched gauge, shortage of locomotives, and lack of foresight to fix these shortcomings. Overall, limited supplies and the means to move them severely impacted Hitler's ability to go deep into the Soviet Union.

Rommel's trek across North Africa was also hampered by the lack of transport vehicles and a means to resupply his long lines of communication. Rommel realized, "the first essential condition for an army to be able to stand the strain of battle is an adequate stock of weapons, petrol and ammunition. In fact, the battle is fought and decided by the quartermasters before the shooting begins."[14] Rommel's ill-fated decision to forge across the continent, against the wishes of Hitler, could not be supported logistically.

The Allied Expeditionary Force took a different approach to logistics, putting a significant amount of brain power to the matter. The planning of Operation Overlord was extensive; recognizing the way to defeat the enemy was to mass more material and troops than the enemy. With this revelation the American industrial base was put in high gear, and planning for required resources such as landing crafts, cargo ships, and tankers, and factors such as beach gradients, tides, winds, the availability of deep water ports, feasibility of air support, and the like were analyzed in great detail to support Allied forces for the first 90 days.[15] The plan, of course, did not survive first contact and is criticized for being too rigid based on faulty assumptions, but the fact that the operational planners took the time to identify the potential shortfalls and mitigate the risks was the reason the Allied forces eventually out-sourced their opponents.

Korea (1950-53). The resupply efforts in Korea suffered from short memories, and the lessons learned about mobility and small unit detachments during WWII were lost. The defeat and retreat throughout the peninsula resulted in a significant amount of troop equipment and supplies left behind or destroyed due to an inability to retrograde it back to the Pusan perimeter.

In the ensuing victory there were inadequate distribution systems to get supplies from the ports forward in to the battlefield. Units were encouraged to use their own organic assets to travel 300-500 miles back to ports and supply bases to get the things they needed – not a popular option. Because of this, units carried too much with them in order to compensate for their lack of confidence in the supply system. Theater shortages included items like yeast, shoe strings, toilet paper, and forks. Many were hording and hiding supplies, or demanding more than they actually needed in order to cheat the system and logistically provide for their troops. They were reluctant to rely on area support assets, and preferred to rely on their own supply assets, but they were not manned or equipped to carry all that they needed.[16] The logistical situation in Korea was a mess, and following the war transformation in the logistics arena was minimal.

Vietnam (1965-72). Vietnam support requirements had unique features never experiences by the U.S. Army. The logistics system was required to support troops operating in a counter guerilla role across 9,000-11,000 miles of water. The logistics doctrine used in previous wars was not effective in this environment, and many assumptions used in conventional warfare did not apply in the harsh jungles of Vietnam.[17] Small units fought in isolated actions launched from isolated bases scattered across the countryside. There were no fixed objectives, no linear boundaries, no front

line and no real rear area. There were no secure ports, depots, storage areas, or supply routes, and attacks on logistics facilities were common.

An important note, as recognized by Congress, was the supply support for this conflict was remarkable, and at no time was logistics a constraint on a major tactical operation.[18] Vietnam in 1965 was primarily agrarian with little to no industrial base, which meant everything required for the conflict had to be imported into inadequate ports and airfields. The logistical build-up lagged behind the combat force build-up due to troop strength limitations and operational decisions.[19] At the height of the war, the U.S. Army in Vietnam supported military forces of South Vietnam, Republic of Korea, Thailand, Australia, New Zealand and other allied countries.

Due to the success of logistic support in the theater, Congress and the Government Accounting Office began to question whether the costs were necessary. In 1969, they partnered with the Army and the Secretary of Defense to launch a program called the Logistics Offensive. This program was intended to immediately reduce the costs of providing logistical support for the war, and also increase combat effectiveness.[20] The Logistics Offensive was hailed as a tremendous success, saving $9.3 billion in its first three years, and lending to increased operational readiness for troops and equipment both in theater and back home.[21]

There were several lessons captured in Vietnam that led to significant transformations and doctrinal changes for American Army logistics. Troops were trained to weld floor plates and stack sandbags on the bottoms of the cabs of their trucks due to shortages in armored vehicles. Standard sized containers became an Army-wide requirement to ease port congestion and simplify handling of supplies. Fresh food is

now provided for combat Soldiers to impact morale, and the drop side 5 ton and 2 ½ ton truck made its way into the Army inventory.

Logistic unit structures and equipping were questioned and impacted as well. Lack of convoy security weapons, the need for specialized port clearance elements, transportation asset management teams, and the importance of logistics planners at the beginning of the operational planning were changes recommended and made in the sustainment structure of the Army. Following Vietnam the logistics community placed emphasis on developing standard operating procedures, introduced common supply stockage levels for units and support activities, established "push packages" as a concept for support, and encouraged the development of a preventive maintenance program. The way of storing ammunition was changed and there was a push for a single fuel for all Army vehicles and equipment.[22] The transformation of the logistics community following Vietnam had a significant impact on how the fight is supported and what those support elements look like.

Cold War (1947-91). The prolonged conflict of the Cold War and the accompanying military mindset perpetuated the supply based logistics system. This system demanded supplies and spare parts at every level from tactical unit, operational theater, up to strategic depot level. A more-is-better mentality, stockpiles and prepositioned equipment, and iron mountains were common place and acceptable for any operation, a sort of brute force logistics. The Cold War helped perpetuate this concept as logisticians planned to support a large force on force battle with the "Krasnovian Hordes". But as deployments became more complex due to changing formations, increased force size, varying types of equipment, long movement distances,

frequency and large sustainment tails, the concept of supply based logistics was too costly, slow, inflexible, and most importantly, failed to adequately support troops. The "basics" that had been used for decades to supply units and troops was not efficient or effective.

The end of the Cold War had tremendous effects on the philosophy of military logistics. Efforts to change came from the top. Army Chief of Staff, General Gordon R. Sullivan, began to "revamp our powerful but sluggish post-Cold War Army into a responsive, sustainable force capable of projecting, sustaining, and protecting our Nation's interests while fighting our wars well into the 21st Century."[23] Change was slow, and a drawdown became the main effort of the post-Cold War Army. Change focused on the operational Army, and many new sustainment concepts were never tried or tested with any amount of urgency.

ODS/S and the 90's (1990-95). Operation Desert Shield and Storm (ODS/S) came in a frenzy, and the logisticians went back to doing what they do best. They eagerly built up stockpiles of supplies and equipment to ensure troops were not without.

Although Operation Desert Storm was short lived (210 days in duration), the conflict revealed additional key logistical shortfalls. Deployment challenges required 200 days to move all the required forces into Kuwait. The lack of strategic lift was compounded by the difficulty processing troops into theater for combat. Moving supplies was no better. It took six months to get the required 30 to 60 days of supply into theater to support 500,000 Soldiers.[24]

All of this was an eye opener and a testament to the issues plaguing the current logistics doctrine to support a major conflict. Stockpiling weapons, equipment, and

supplies was how logistics was done, but even the 1992 National Military Strategy acknowledged the United States was unprepared for war and changes needed to take place. After ODS/S, the U.S. had an enormous amount of supplies and equipment left on the ground that took several years to clean up. The United States vowed never again to mismanage supplies so poorly. Across the Army the universal resolve eventually lead to a renewed interest in the campaign to transform, to include how we support our forces.

Adding to the resolve were lessons from Bosnia (1992-95) and Kosovo (1998-99) that suggested Army equipment was too large and heavy to effectively operate in constrained terrain and in cities. Until changes were made in the equipment and formations the logisticians were supporting, it was difficult to change how support was rendered. Nobody wants the tail wagging the dog, and many were apprehensive to institute any real change in the way America supplied its forces. By the last half of the century, transformation was on everyone's mind.

Logistics Transformation of the 90 's

Joint Vision 2010. In 1996, the Chairman of the Joint Chiefs of Staff published Joint Vision 2010 (JV2010), containing key tenets to achieve dominance over adversaries, one of which was focused logistics. JV2010 defined focused logistics as "the fusion of information, logistics, and transportation technologies to provide rapid crisis response, to track and shift assets even while in route, and to deliver tailored logistics packages and sustainment directly at the strategic, operational, and tactical level of operations."[25] The document listed eight concepts to pursue in the development of this transformation to include anticipatory logistics and personnel support, split based

operations, sustained tempo, enhanced throughput operations, velocity management, battlefield distribution systems, total asset visibility, and objective supply capability.

Immediately following in 1997, the Joint Staff Logistics Directorate (J4) added the addendum, “Focused Logistics, the Joint Logistics Roadmap to Joint Vision 2010” which laid out six required focus areas for the joint logistician. The framework for this concept included: Joint theater logistics command and control, joint deployment and rapid distribution, information fusion, multinational logistics, joint health services support, and agile infrastructure.[26] No one preached “back to basics”. A solid plan of action was proposed from the top down and a vision was shared for improving the way logistics was done.

Army Vision 2010. On the Army side of the house, also in 1997, Army Vision 2010 (AV2010) was published. AV2010 was a catalyst to several major logistics structure changes loosely synched to support the JV2010 developed by the Chairman mentioned earlier. Challenges to AV 2010 were with strategic lift, funding, and logistical capabilities. By the late 1990’s, the Army Chief of Staff, General Eric Shinseki, knew the Army needed to transform to keep up with the changing nature of modern warfare and to shape what was left after the Cold War drawdown. The Brigade Combat Team became the standard modular unit, and along with it, tremendous changes in the logistics structure to support that element. Forward Support Companies were attached to maneuver units, with ties to a Sustainment Brigade. The divisional logistics structure was dismantled, and the Division Support Command (DISCOM) and Main Support Battalion (MSB) were no longer required. Eventually, the Army went from multiple levels

of maintenance to just two levels to simplify pass back requirements and enable more fixes at the lower level.

Army Vision 2010 also identified a requirement to institute major changes in the area of logistics and how the US supports its forces. Focused logistics outlined in AV 2010 encompassed fusing technology and in transit visibility to deliver tailored logistics packages to customer units. In short, the old way of doing business with supply based logistics was recognized as ineffective for the vision of the future force. A distribution based system was more appropriate to keep up with a lighter more responsive force. This was a major shift in doctrine that had been in place for the last century.

RMA and RML. In 1999, the vow to transform the Army continued and resulted in a “revolution in military affairs” or RMA. General Dennis J. Reimer, the Army Chief of Staff, often stated that there could be no RMA without starting with a revolution in military logistics, or RML. The Army’s top logisticians spent two years defining the Revolution in Military Logistics and mapping a strategic path to guide the Army through it.[27] This was the first time in U.S. history a unified voice emerged from senior logistics leaders espousing the future vision of the logistics corps in such clear terms. There was talk of achieving an agile defense infrastructure, getting the right stuff at the right time to the soldier in the foxhole, integrating logistics functions, replacing volume with velocity, reducing demand, and lightening the logistic load for the war fighter.[28] It looked, literally from soup to nuts, at making changes at all levels. The next phase beyond 2010 was to focus on emerging technologies to lighten support requirements, enable logistics to move quicker and anticipate needs faster, and reduce overall demand.

Logistics Transformation in the New Century

Joint Vision 2020. In 2000, General Henry H. Shelton, the Chairman of the Joint Chiefs of Staff, published JV2020, and like JV2010 it contained a section on "Focused Logistics". It outlined a transformation plan for logistics to address customer confidence, simplified priority systems, and actionable asset visibility. Focused logistics was to be accomplished through improved information systems and transportation technologies, innovative organizational structure changes, and reengineered processes.[29] Unlike JV2010, JV2020 did not have a follow-on Army Vision 2020 document.

9/11 Impacts. One year later, the largest homeland terrorist attack in American history changed everyone's focus. RML was rarely heard of again, although the "transformation" buzzword still echoed halls. However, most of the energy was placed into ensuring support was provided for the emerging crisis. Despite the happenings on 9/11 and the eventual need to support two war fronts, the logistics community did have some key leaders capturing lessons and instituting some of the ideas that came out of the big push for transformation in the 90's.

Logistics Triad. In 2001, Lieutenant General Charles S. Mahan, Jr. was appointed to lead a team to develop logistics strategy to support AV 2010, and a lighter and faster Army. The Army Chief of Staff's vision for change eventually took a back seat to support combat operations, but progress continued to be made to ensure the logistics community understood and was prepared to achieve appropriate changes. LTG Mahan met with what was known as the logistics triad of top logisticians to review the three goals established by the CSA for combat support transformation: enhance strategic responsiveness, reduce the combat zone footprint for combat support and service

support (CS/CSS), and reduce the cost of logistics without reducing fighting capability or readiness.[30] Each of these goals was targeted with specific fixes.

The first goal was strategic responsiveness required to meet deployment timeliness - something found woefully inadequate during the first Gulf War. Estimations suggested the Army required 90% of their equipment and forces to move by sea, and 10% by air. This meant the strategic lift requirement needed to be seven times faster than what was accomplished during ODS/S in order to meet the CSA's timelines to have a Brigade Combat Team in place within 96 hours, a Division size element in 120 hours, and a Corps within 30 days.[31]

In 2002, in an effort to achieve this goal, the Army developed the Army Power Projection Program, or the AP3. The AP3 draws requirements from combatant commanders' operational plans, Defense Planning Guidance, and Joint Vision 2020 by identifying available lift, infrastructure and strategic enablers needed for successful deployment support. This management tool considers deployment out load, Army Prepositioned Stocks (APS), deployment automation, and current distribution systems.[32] AP3 did not solve all issues with strategic responsiveness, but it went a long way in coordinating and organizing information for planning purposes and recommended mitigation measures to give commanders more accurate options.

Next was the goal to reduce the CS/CSS footprint in the combat zone. Targeted specifically were the stockpiles of fuel, ammunition, and repair parts, which account for 90% of a heavy force's daily support requirement in tonnage.[33] The new Army support doctrine dubbed "just-in-time-logistics" attempted to address this problem of having a massive footprint on the ground for support assets and resources.

The final goal was to reduce the cost of logistics without reducing effectiveness or support to the war fighter. The logistics triad had to come up with ways to modernize operations and structure to be more cost effective. Coincidently, the 2001 Quadrennial Defense Review required the Department of the Army to streamline its headquarters and flatten the organization. In light of this requirement, the DA G4, under the tutelage of LTG Mahan, validated the roles and missions of the G4 and attempted to rid the organization of redundancy and streamline its structure.

The G4 also gained responsibility for evaluating sustainment for the Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASAALT). The intent was to ensure logistics was adequately considered throughout the acquisition process, balancing cost with performance, and presumably resulting in the fielding of more reliable and sustainable systems. By considering operational costs at the start of the multi-year process, the lifecycle costs were reduced, and readiness rates increased. Mahan felt logistics transformation depended on the ability to design, develop, and field sustainable systems, and he was right.[34]

Another means of reducing costs was with the development of the Single Stock Fund (SSF). The SSF reduced costs by combining long-established wholesale and retail supply activities into a single integrated nationally managed system. SSF reduced customer wait time allowing quicker redistribution of millions of dollars worth of spare parts and supplies.[35] It also helped restore confidence in the supply system.

In addition, the Senior Logistics leaders named six tenets they felt were required to meet the challenging goals posed by the CSA. They advocated a seamless logistics system from factory to foxhole. They felt distribution based logistics was essential to

providing the best support possible to the war fighter, and total asset visibility was critical to instilling confidence back into the supply system. This could only be accomplished through rapid force projection, an agile infrastructure, and an adequate logistics footprint.[36] The triad challenged the logistics community at all levels to find even more innovative ways to accomplish this sustainment transformation.

Lean Logistics and Focused Logistics. From 1999 to 2003 there were all sorts of initiatives and concepts proposed; ideas were plentiful, but some results were problematic. By 2001, there was a renewed interest in how global businesses supported themselves and their customers and how they delivered value. There was concerted effort to streamline the logistics chain. “Lean logistics” and “focused logistics” became the buzzwords, with progress to that end being made at all levels.[37] In the early part of the decade, areas of concentration included deployment automation, power projection platforms, and reducing demand by influencing the acquisition process for more efficient, lethal, and reliable systems. They were looking at embedded diagnostic systems, vehicles with onboard water generation, more precision munitions, and embedded cargo handling and robotics. Initiatives included agile transportation, joint theater logistics, and small unit logistics, as well as researching programs that would provide a quick deliverable unmanned aerial vehicle, the theater support vessel, and air-transportable cargo screening.[38] Some of these systems never made it off the drawing board, while some made it to the acquisition process, leveraging industrial ingenuity and commercial practices. Despite the naysayers, the logistics community was looking at all possibilities.

JLOG/PE. The joint theater logistics effort also received much needed assistance and attention. In October 2002, the Department of Defense Director of Operational Test and Evaluation Command (OPTEC) established a multi-service team to conduct test and evaluation programs to improve joint logistics planning and execution, or JLOG/PE. They explored not only logistics processes across all services, but also commercial business practices to see if they had any transferable methods that could enhance the logistics process in the military. They paid particular attention to fuel and ammunition, developing web based joint management tools that could be used across the services to give the Joint Staff a clearer picture of joint logistics operations and requirements and inform their decision making processes.[39] Products vetted by this multi-service team were used in Terminal Fury 05 (Rolling Brief, Joint Logistics Training Package-Munitions Module, and Joint Staff Munitions Status Report) and tested by Central Command in Operation Iraqi Freedom in 2005. JLOG/PE identified shortfalls with logistics situational awareness, monitoring and assessing logistical statuses, estimating and calculating future consumption, and exercise realism.[40]

OIF/OEF and Just-In-Time-Logistics. When Operation Iraqi Freedom (OIF) began in late 2002, early 2003, several of these new initiatives were attempted in one of the largest logistical undertakings in U.S. military history. At the onset of the war, 68% of the OIF budget was spent on logistics and transportation.[41] But the "just-in-time-logistics" being touted as the fix to supply based logistics stockpiles was a failure as reported by units on the receiving end of the supply chain. Units were experiencing critical shortages on their trek to Baghdad. The "just-in-time-logistics" worked in garrison with a short supply chain, but fell apart with the extended lines of communications in

wartime. The new measurement of performance was order wait time, vice the days of supply used with the old supply based logistics doctrine. Just-in-time-logistics attempted to use an off the shelf commercial supply chain management concept to reduce on hand quantities, favoring In-Transit Visibility (ITV) and a responsive land based distribution capability. Unfortunately, ITV and the required distribution assets did not exist at the level required for this concept. Just-in-time-logistics was based on echelon above corps (EAC) trucks that were never resourced. By the end of OIF the evidence is hard to dispute. Based on the “iron mountains” spread about the battlefield and tons of supplies back hauled out of theater, there is still quite a lot of work to be done.

There were other issues with the new sustainment concepts that became magnified with the war in Iraq. From the start, even though operationally successful, problems surfaced with Title 10 responsibilities and the attempt at Joint Logistics, particularly for the Army. Another problem was with poor asset visibility due to incomplete container documentation, something never really fixed. In addition to inadequate trucks to support forward in the theater, there were not enough transportation assets to distribute material forward from sea and air ports, repeating issues seen in ODS. Shortages of repair parts such as tires, track, helicopters parts, and radio batteries resulted in cannibalization or circumventing normal supply channels and duplication of requisitions. Supply shortages, backlogs, and a $1.2B discrepancy between what was ordered and what material units claimed they had on the ground actually caused an operational pause early on in the war.[42]

LTG Christianson. Lieutenant General Claude V. Christianson, Coalition Forces Land Component Command (CFLCC) Chief of Logistics (C4), was the senior logistics

leader on the front lines that witnessed these shortcomings. He understood the issues troops were having on the ground with sustainment. In 2003, Christianson was moved from his position as the lead theater logistician to take the job as the Department of the Army G4, carrying these shortcomings with him. By the end of the year, he had authored a white paper entitled, “Delivering Materiel Readiness to the Army”. This white paper addressed four critical area shortfalls that needed refocus to better support the war - connect logisticians, modernize theater distribution, improve force reception, and integrate the supply chain.[43]

Connecting logisticians meant increasing asset visibility of incoming supplies and equipment. Lack of asset visibility causes customers and logisticians to rely on pushing support based on assumptions of what is needed, not what is actually needed. It also causes customer units to order the same item multiple times because they have no confidence they will get what they ordered. By connecting logisticians this confidence in the supply system can be fixed. The white paper also suggested a requirement for a satellite based system to provide continuous 24 hours a day, seven days a week, asset visibility. It referenced specifically the Battle Command Sustainment Support System (BCS3), the Global Combat Support System-Army (GCSS-A), the Logistics Modernization Program (LMP) and the Logistics Common Operating Picture (LCOP).[44]

The second focus area for LTG Christianson was to modernize theater distribution systems in order to more effectively support the war fighter. Soldiers did not have the battlefield distribution tools they needed for time definite delivery, or to adequately support the new concept of distribution based logistics as addressed in the Revolution in Military Logistics. The success for battlefield distribution is measured at

the last tactical mile when troops get what they need. To fix theater distribution required modernizing the force with equipment that allowed speed and agility in the distribution arena, and the white paper promised to work closely with the Chief of Staff of the Army's Task Force Modularity to fix.[45]

The third focus area, improve force reception, was another glaring deficiency experienced during the build up for Operation Iraqi Freedom (OIF). There were a lot of improvements accomplished after Operation Desert Shield/Storm to increase rapid deployment of forces with Large Medium Speed Roll-on Roll-off (LMSR) vessels, C-17's, contracting of civilian vessels and aircraft, formation of Transportation Command (TRANSCOM), AP3 discussed previously, and other initiatives, but nothing had been done about receiving forces at the far end. During OIF, the receiving units were ad hoc in nature, thrown together and given the mission to receive troops, equipment, and supplies, stage them, and move them on to further staging areas for integration into the fight, or Reception, Staging, Onward movement, and Integration (RSOI). The term "RSOI" is commonplace today, but was a new, untested, unrehearsed and untrained concept at that time, and LTG Christianson wanted to change that with a comprehensive theater opening capability.[46] This trained element would be able to provide operational sustainment command and control while units were in transit, with reach-back capability and initial network visibility. They would provide basic life support services, force protection, and port staging operations to assist units through reception and into the fight, and then operate as a hub for theater distribution and requirements visibility.

The most difficult focus area was the last – jointly integrate the supply chain. The white paper envisioned an Army Enterprise solution, integrated at all levels, strategic, operational, and tactical, that can plug in anywhere. Customer units and logisticians linked with total asset visibility (TAV) and provided joint information through a common logistics operating picture (LCOP). In line with the first focus area, but even beyond that, a comprehensive approach to logistics. Christianson envisioned an Army Enterprise solution with responsibility for the entire process, from one end to the other, in a joint environment, spearheaded by the Army logistics community. The end state would support the combatant commanders by allowing all agencies and services to enter local supporting systems, and see end-to-end joint total asset visibility.[47]

LTG Christianson's front line experience helped him determine what the logistics community needed to focus on the most, and what changes needed to be made. His visionary thoughts helped revolutionize how supplies were delivered on the battlefield. A lot of smart logisticians knew changes needed to be made, and seeing the failures first hand of the existing systems allowed the Army G4 to target key aspects to drastically improve the system. The key was to build back confidence in the supply distribution system. As stated by the famous coach Vince Lombardi, "Confidence is contagious. So is lack of confidence."[48]

How are We Doing Now?

Logistics was not seamless during Operation Iraqi Freedom (OIF) and certainly is not in Operation Enduring Freedom (OEF). OIF and OEF were seen as a curse and a blessing to new logistics doctrine, processes, and equipment. Conflict could not have come at a better time in order to expose the shortcomings of many of the logistics initiatives of the time, shaving years off of trials and failed implementation. OIF/OEF

tested the agility of U.S. logistics and provided invaluable insight into what worked and what did not.

Government Accounting Office (GAO) reports produced in the last couple years recognize positive logistics changes that were made due to an Army in conflict. For example, U.S. Transportation Command created the Central Command Deployment and Distribution Operations Center to coordinate movement of troops and equipment in and out of theater. Department of Defense (DoD) developed new policies for increasing use of radio frequency tags to increase ITV.[49] Many other changes in doctrine and processes have been made.

GAO reports also reflect that the Army and DoD still have a lot of problems to solve. There are troubles with the Logistics Modernization Program, originally scheduled to be complete by 2005, and intended to manage inventory and depot repair operations. Problems with data accuracy, software, and lack of critical functionalities have delayed implementation.[50] Distribution of supplies is particularly difficult in Afghanistan, with movement of supplies through neighboring countries, limited airfield infrastructure, lack of ITV, limited storage capacity at logistics hubs, coalition coordination issues, and conflicting transportation priorities for contractors.[51] One report states DoD continues to have difficulty collecting information on pilferage and damaged cargo, and is still not tracking and managing containers to a level required to effectively manage the supply chain.[52]

Apart from the wars in Iraq and Afghanistan there are other sustainment issues remaining. Problems with estimating long-term operating and supporting costs for major weapon systems still plague the acquisition community.[53] Accountability and disposition

decision for non-standard tactical equipment has not been standardized, and is still impaired by a lack of ITV.[54] GAO has designated DoD's supply chain management as a high risk area, recommending improvements in requirements forecasting, asset visibility, and materiel distribution.[55] None of these issues are new, and remain regardless of the wars in Iraq and Afghanistan. Getting back to basics will not fix them, either.

The logistics scorecard for the last decade has marks on both sides. There was some success in distribution based logistics, but stockpiling of supplies and equipment still occur on a wide scale. Total asset visibility has never been achieved despite tremendous effort to get containers properly marked with the appropriate level of detail to its contents and more policies for the use of radio frequency tags. An agile infrastructure has not been achieved, supporting effectively, just not efficiently. Rapid force projection was somewhat successful in OIF, but remains difficult in OEF due to the nature of the landlocked battlefield. Unit logistics structures still need work, appearing to work well in the Brigade Combat Teams, but at higher echelons, bootleg logistics is still being practiced to ensure the fight is supported.

What is Next for Logistics Reform

As stated by Arthur Cebrowski, "Our inability to predict the future does not mean that we know nothing about it."[56] Logistics efforts show a long history of repeated shortcomings. Many lessons have been learned and a new vision for transformation needs to be developed based on what we do know. Now the battle cry is "back to basics" and the leading logisticians are jumping on that bandwagon. Our sustainment soldiers and war fighters have shown that no mission is too tough. Should we really be asking them to go back to a basic standard operating procedure they have never done

before? Or should we capitalize on the talent and experience they have gained in the last decade and come up with a new vision for the sustainment future? Getting back to basics will not keep the logistics community in step with the rest of the Army.

Industrial Based Globalization. As discussed, logistics is the most complex, dynamic, diverse functional element on the battlefield and it is essential that it delivers value to the maneuver commander. Logistics is even more effective when the industrial base can compliment logistics and get items into the hands of Soldiers. Globalization needs to be capitalized upon, and can make this concept reality, if properly shaped. There must be a better link between Army logistics management with the sustainment community to smartly leverage global commercial markets.

LOGCAP. The Army Logistics Civil Augmentation Program (LOGCAP) has been a success in support to troops and units in combat. Even though there have been civilians on the battlefield offering services of one kind or another since the Civil War, the institution and concept of capitalizing on this asset must be shaped for the future. In addition, flexible contracts have been critical to many remote units with new innovative technology.[57] The use of LOGCAP must be carefully coordinated to maximize effective use of civilian assets consuming their own resources on the battlefield. The logistics community must also be prepared to conduct these same missions, and not rely on the assumption that LOGCAP will be available.

Joint Vision 2020 Capitalization. The current Chairman of the Joint Chiefs of Staff, General Martin Dempsey, wrote an article in the Joint Forces Quarterly where he stated, “We are developing today the joint force that our nation will need in 2020. This force will operate in a global security environment that will be more competitive and

therefore more dangerous and complex. As we determine what this joint force should look like, we must offset our tightened budgets with more innovation and integration."[58] Note there was no mention of getting back to basics, but an urging for more innovation and integration, and the logistics force will need both of these qualities.

Joint logistics is said to be a barrier to transformation because money drives resources and the different services are resourced based on Title 10 responsibilities low on everyone's priority list. Strategically, as well as operationally and tactically, commanders prefer to work autonomously and prefer to not rely on other services for joint operational logistics. There is a lack of trust and widespread inter-service rivalries due to budget concerns and the fight for resources. The Goldwater Nichols Act made tremendous progress in getting services to work jointly, but much more needs to be done. A push for joint logistics must continue.

Strategic Lift. One area that could always use improvement is strategic lift capabilities. This is an area that can capitalize on technology. For example, there is a lift ship called the SkyCat 1000 which has a heavy lift payload of 1,000 tons. It is faster than sealift, a little slower than a C17 Globemaster airplane used for rapid strategic lift of troops and cargo, but can carry much more in a single trip. The SkyCat 1000 is cheaper to operate, acquisition, has a larger capacity, uses helium and has a 3,000 mile range.[59]

Supply Chain Management. There is not a single system that can tell you, Department of Defense wide, total asset visibility over the entire billion dollars worth of excess inventory. Logistics transformation must be more than putting new technology over old formations and processes. Supply chain management has been designated a

high risk area and improvements must continue to be pursued. In 2010, DoD developed corrective action to fix requirements forecasting with a program called Comprehensive Inventory Management Improvement Plan, but has not developed any new ideas to fix asset visibility or materiel distribution.[60]

Another part of supply chain management that has been easy to identify but difficult to fix is container tracking and management. The call for a single container management system has been heard since the standardization of containers after Vietnam. Part of the problem appears to be the same issue facing other joint issues, resources and lack of common solutions. The Army needs to take the lead in this effort and bring the other services on board. Radio Frequency Identification (RFID) technology already exists in Army formations and is extensively used in the commercial sector. Feeble attempts have been made to direct units to use this system effectively, but more emphasis is needed to make it effective, and the fix could be as simple as increased leader emphasis and additional training.[61]

Personnel. The siphoning of logistics troops to fill out expanding Brigade Combat Teams to meet mandatory force caps is common practice. Required echelons above corps (EAC) logistics troops are routinely placed in the U.S. Army Reserves or planners assume the ability to contract any shortfall. This practice could put the entire military at risk. It was apparent during ODS/S, OIF, and OEF that current EAC force structure is insufficient, but cuts continue. Sustainment structure taken from the EAC troop pool and diverted to BCT's organic logistics structure in a direct support role makes them unavailable for area support. In the pending cuts to force structure discussions, the

appropriate logistics personnel need to be retained in sufficient quantities to effectively support any and all new logistics doctrine.

Recommendations and Way Ahead

A quote by Thomas Jefferson gives good insight into a way ahead, “I like the dreams of the future better than the history of the past.”[62] U.S. Army logistics needs to focus on the future and transform to support the future force.

The required changes in Army and Joint Logistics will not happen accidently. In John P. Kotter’s book, *Leading Change*, he suggests an eight step process to force change effectively: establish a sense of urgency, create a guiding coalition, develop a vision and strategy, communicate the change vision, empower broad-based action, generate short term wins, consolidate gains and produce more change, and anchor new approaches in the culture.[63] This same process could be used for the logistics community in the post-war Army, much like had been done during the Army transformation efforts of the late 90’s. In the same book, Kotter goes into detail explaining the difference between managing an organization and leading an organization. What the Army sustainment community needs are people to lead change, not just manage the current set of circumstances. Right now, the logistics leadership is managing a set of circumstances surrounding support to a two-front war, resetting the force, and recouping from the whirlwind of logistics changes instituted to support an Army at war. The environment is ripe for continued positive change.

There are a lot of different agencies working on how logistics should look in the future. A Worldwide Logistics Training Workshop held in Spring 2008 had record attendance, and a theme of Logistics Support on the Move.[64] The sustainment community is anxious to move forward and find ways to keep improving their craft. Army

Logistics Vision 2020 needs to be developed and implemented by the senior logisticians of today.

There must be a cultural change in the military, and the wars over the last decade have given us a unique opportunity to influence that culture. The Army and DoD needs to find ways to reward initiatives and efficiencies, and not punish units with decreased budgets and resources. The services must attack waste and reduce redundancies, even if in baby steps, and cultivate the idea of stewardship.

In addition, the U.S. Army has a vast number of personnel and professional military logisticians that now have a tremendous amount of experience. Many of them are junior officers and enlisted Soldiers, which offers tremendous promise for the future. Many of their lessons learned and battle-field solutions should be captured and analyzed for inclusion in future doctrine. Based on the nature of the conflict in OIF and OEF, support troops and combat troops worked extremely close together as a single team, and many barriers of the past were tore down. This one team concept should remain as an enduring aspect of the Army culture.

The current state of logistics is nowhere near the vision of the JV2010 document introduced in 1996. Persistent conflict has derailed the revolution in military logistics, but demonstrated in a real world battle-lab what would work and what would not. The wars in Iraq and Afghanistan have been resourced on the fly and sustained by minimal basic doctrine. Non-doctrinal means were employed due to the size of the effort, resources available, personnel restrictions, and innovative sustainment methods. Regardless of all these issues, the logistical support to the American Armed Forces remains an

historically reportable phenomenon. The logistics leaders must continue to think strategically and forge forward with innovation.

As stated by Confucius, "By three methods we may learn wisdom: First by reflection, which is the noblest; second by imitation, which is easiest; and third by experience, which is the bitterest."[65] Reflection on history shows us how logistics can impact the fight. Urging units and Soldiers to get back to basics is the easy way out. The logistics community is up to the challenge to take the wisdom they have learned over the last decade and put those experiences and turn them into positive change.

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